State of California
Regional Water Quality Control Board
North Coast Region

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June 18, 2003

EXECUTIVE OFFICER'S SUMMARY REPORT
9:00 a.m., June 26, 2003
North Coast Regional Water Board
Hearing Room
5550 Skylane Boulevard, Suite A
Santa Rosa, California

ITEM: 15

SUBJECT: Consideration of a Sensitive Watershed Nomination to the California Board of Forestry and Fire Protection for the Elk River Watershed pursuant to Section 916.8 of the Forest Practice Rules

Background

The 31,400 acre Elk River watershed is located southeast of the City of Eureka, and flows into Humboldt Bay near Fields Landing. Elk River watershed has two major forks. The North Fork Elk River has a watershed area of approximately 14,600 acres. The South Fork Elk River has a watershed area of approximately 13,400 acres. The watershed is covered with second growth redwood and Douglas fir forest. Down stream of the confluence of the North and South Forks, the stream becomes an unconfined, low gradient (<1 percent) meandering channel in a valley flood plain. The average annual rainfall ranges from 40 inches at Humboldt Bay to 55 inches on the ridgeline. Elk River supports coho salmon, chinook salmon, steelhead and cutthroat trout, among other species. The residents along the North and South Fork Elk River utilize the stream for drinking water supply, agricultural water supply, lawn and garden watering. Elevations range from sea level to 2400 feet at the ridgeline.

During many North Coast Regional Water Quality Control Board (Regional Water Board) meetings between 1997 and the present time, several residents of the Elk River watershed expressed concerns about the water quality impacts of timber harvesting on fisheries, domestic water supply and local flooding. Their primary focus was on the timber harvesting conducted by The Pacific Lumber Company (Pacific Lumber) and the rate of timber harvesting occurring in the watersheds. In December 1997, the Regional Water Board added Elk River to the 303(d) list of impaired waterbodies due to excess sediment affecting the beneficial uses of water.

The logging history of the Elk River watershed is similar to many watersheds in the near-Humboldt Bay area. Railroads were built up the bottom of the major streams and logs were skidded to downhill landings by animals or steam donkeys. Most of the old growth timber was completely logged by the 1940s, when tractor logging and truck hauling was the primary method. The early logging had little regard for protection of streams from sedimentation. Since the enactment of the Forest Practices Act, an effort has been made to construct roads on midslopes and ridges to utilize cable yarding methods which are less damaging than tractor yarding. The main truck haul road still remains adjacent to the main stem North Fork Elk River.

The watershed is dominated by second and third growth redwood and Douglas fir timber in the 50 to 60 year age class except where it has been recently logged.

In 1999, the Headwaters Reserve purchase was completed, and the headwaters of the South Fork of Elk River now is predominantly public lands. The North Fork Elk River remains predominately owned by Pacific Lumber. Several other landowners hold timberlands in the lower portion of the watershed.

After an interim period in the later 1990s when harvesting was suspended in much of the watershed, Pacific Lumber commenced harvesting under a new Habitat Conservation Plan and Sustained Yield Plan, documents which had been approved by various agencies of the state and federal governments. Litigation has been filed over the adequacy of these documents, and such litigation continues to this day.

In 1999 and 2000, residents and others in the watershed formally requested that the Regional Water Board take action to control the discharges causing excessive sedimentation and flooding in the watershed (as well as four other watersheds). After commencing the process for holding adjudicatory hearings to address the issues in the watersheds, the Regional Water Board postponed then ultimately cancelled its schedule of hearings in 2001.

On March 2, 2001, and on May 8, 2002, the State Water Resources Control Board (State Water Board) received petitions filed by the Humboldt Watershed Council, Jesse Noell, and Ken Miller (Petitioners) alleging that the Regional Water Board had failed to act as required. The March 2, 2001 petition asked the State Water Board to review the lack of action by the Regional Water Board on Petitioners' previous petition dated April 17, 2000, that requested action against Pacific Lumber for alleged improper logging practices in the Freshwater Creek and Elk River watersheds. The May 8, 2002 petition asked the State Water Board to direct the Regional Water Board to: (1) require Pacific Lumber to submit reports of waste discharge for all logging operations in the Freshwater Creek, Elk River, Stitz Creek, Bear Creek and Jordan Creek drainages; and (2) to issue waste discharge requirements corresponding to each of those waste discharge reports.

On January 23, 2002, in response to the March 2, 2001 petition, the State Water Board issued Order No. WQO 2002-0004 which remanded the issues contained in the petition back to the Regional Water Board. In response to the May 8, 2002 petition, the State Water Board in October 2002 issued WQO 2002-0019 ordering the Regional Water Board to continue to take action to address water quality problems within the five watersheds, that the actions to protect water quality from potential adverse effects to beneficial uses of water shall include requiring reports of waste discharge and issuance of waste discharge requirements, as appropriate, and to provide periodic progress reports to the State Water Board.

Throughout 2002, numerous Regional Water Board meetings and hearings were conducted to address the issues surrounding the two petitions and related State Water Board Orders. Regional Water Board and staff actions have included issuance of waste discharge requirements, issuance of a cleanup and abatement order, establishment of several monitoring programs and agreements, acceleration of Total Maximum Daily Load development, and convening of the Humboldt Watersheds Independent Scientific Review Panel, to name a few.

On January 24, 2003, the Regional Water Board provided direction to staff in response to the Humboldt Watersheds Independent Scientific Review Panel (ISRP) report, titled "Final Report on Sediment Impairment and Effects on Beneficial Uses of the Elk River and Stitz, Bear, Jordan and Freshwater Creeks" (December 27, 2002). The Regional Water Board provided direction to staff in the form of five motions, including one directing staff to prepare information supporting Sensitive Watershed Nominations under the California Forest Practice Rules (FPR) Section 916.8 for the five watersheds in Humboldt County. The Nominations would then be forwarded to the California Board of Forestry and Fire Protection for Elk River and Freshwater, Stitz, Bear and Jordan Creeks.

Elk River was selected as the first watershed for development of information to support nomination as a sensitive watershed, and this document assembles the information for "planning watersheds" of suitable size within the Elk River drainage. Five[1] planning sub-basins in the Elk River watershed have been developed for use in the FPR Section 916.8 process.

Elk River was selected as the first watershed[2] for development of information to support nomination as a sensitive watershed, and this document assembles the information for five sub-basin "planning watersheds" within the Elk River drainage. The five planning watersheds are Upper South Fork Elk River, Upper North Fork Elk River, Lower North Fork Elk River, Lower South Fork Elk River and Lower Elk River, all located within the Eureka Plain Hydrologic Unit in Humboldt County, California. Figure 1 shows the locations of the five Elk River planning watersheds, their relationship to the Eureka Plain Hydrologic Unit in which they reside, and their primary drainages that ultimately discharge to Humboldt Bay.

The five Elk River planning watersheds are proposed for submittal to the Board of Forestry (BOF) as a combined-package because of their spatial proximity, similar characteristics, level of adverse cumulative impacts and the continuing timber harvest activities. The grouping of the five planning watersheds is consistent with requirements of FPR Section 916.8, which specifies that nominations need to be on a planning watershed scale. These five sub-basins are based on the Calwater v2.2 planning watersheds. Calwater planning watersheds were developed by the California Department of Forestry and Fire Protection for use in timber harvest planning and review.

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[1] The use of "five watersheds" and "five sub-basins" may cause some confusion. Five Humboldt county watersheds (Elk River and Freshwater, Jordan Bear and Stitz Creeks) are all to have nominations under FPRs 916.8. Elk River is the first such watershed and is being addressed in this agenda item. The Elk River watershed is sufficiently large to require that it be further subdivided into 5 sub-basins known as "planning watersheds."

[2] The workload is large for developing nomination packages suitable for submittal to the California Board of Forestry and Fire Protection. Therefore, staff is proposing to develop the sensitive watershed nomination packages for Elk River, Freshwater Creek, and Bear, Stitz and Jordan Creeks in series. The staged process allows opportunities to receive feedback from all interested parties (local residents, industrial timberland owners, and others) and direction from the Regional Water Board on the first package, prior to developing final submittal packages for the remaining four watersheds (Freshwater, Bear, Jordan and Stitz Creeks). The proposed order of sensitive watershed nomination packages is Elk River followed by Freshwater Creek, and then, finally, a combination package of Bear, Stitz and Jordan Creeks for the third and last sensitive watershed nomination.

Sensitive Watershed Nomination Process

The Regional Water Board is developing a Total Maximum Daily Load (TMDL) for Elk River. It would be useful in the TMDL development to have the Board of Forestry and Fire Protection prepare or modify forest practice rules that would assist in recovery of beneficial uses of this specific watershed. The FPRs allow for nomination of a sensitive watershed under section 916.8 of the rules. This section sets out the process for the Board of Forestry and Fire Protection to determine eligible nominations. Complete nomination packages are required to have substantial evidence that a condition, or conditions, exist(s) where further timber operations within the planning watershed will create a reasonable potential to cause, or contribute to ongoing, significant adverse cumulative effect(s) on the resources identified in 916.8(a)(3) [936.8(a)(3), 956.8(a)(3)], and as set forth in Technical Rule Addendum No. 2 (14 CCR 912.9)[932.9, 952.9] and that mitigation of such significant cumulative effects requires the application of protection measures not required by the Forest Practice Rules. The nomination must identify the specific resources which are sensitive to further timber operations and specific mitigation measures that will provide the necessary protection of the sensitive resource(s).

Upon receipt of the nomination, a nominations review committee, formed by the Board of Forestry and Fire Protection (Board of Forestry), reviews the nomination for compliance with the informational requirements for such nominations. The nomination review committee then makes a recommendation to the Board of Forestry concerning the nomination, which then holds a public hearing. Any recommendations adopted by the Board of Forestry must be processed in compliance with state law concerning rulemaking (the "Administrative Procedures Act," Govt. Code Section 11134 et seq.)

The nomination process itself requires substantial information be submitted that supports classification of the watershed as sensitive. To comply with the requirements, the Regional Water Board must, among other things:

- discuss the effects that further timber operations will have on specific resources at risk;
- specify and discuss the significance of those effects not sufficiently addressed under the forest practice rules;
- discuss the significance of the effects in light of the condition of the resources in areas adjacent to the planning watershed;
- submit the following information, descriptions, documents, or maps as appropriate:

    - Name, approximate size, drainage basin description, and location of the watershed(s).
    - Specific resources (such as aquatic organisms, domestic water supplies, and others) that are significantly threatened.
    - Natural or management-induced conditions (destabilized soils, landslides, etc.).
    - Approved Habitat Conservation Plans.
    - Suggested, feasible mitigation measures needed, in addition to current forest practice rules to mitigate or avoid new or continuing significant cumulative effects related to timber operations.

The Regional Water Board will need to submit any other information about the watershed that may assist the Board of Forestry evaluate the nomination, and shall include literature citations, expert written opinions, other relevant sources of information and, where possible, copies of information used to complete the nomination. In addition, landowners, water purveyors, watershed associations, other community groups, and certain specific individuals need to be identified.

As noted above, the rules require that nominations be screened for compliance with the informational requirements by a nominations review committee, which may consist of the appropriate District Technical Advisory Committee or other Board of Forestry and Fire Protection Committee. The nominations review committee shall consult with CDF, the Regional Water Board, the Department of Fish and Game, the California Geologic Survey, and other(s) as deemed necessary to determine whether the nomination is supported by substantial evidence. The nominations review committee shall then forward a recommendation for approval or denial of the nomination to the Regional Water Board within 120 days of the date of receipt by the committee. The nominations review committee shall describe its specific reason(s) for recommending approval or denial of the nomination. Once adequate information is received, the Board of Forestry and Fire Protection will publish a draft notice for newspaper publication and indicate that a public hearing will be scheduled within 60 days. Complete requirements for nomination are set out in Appendix I to the attached staff report.

Elk River Watershed Conditions

The Elk River drainage is impaired by sediment as defined under Section 303(d) of the Clean Water Act and therefore is extremely sensitive to additional sediment discharges from land management activities that may cause further impairment. The Elk River drainage is also documented by multiple state agencies as "significantly cumulatively impacted" as a result of historic land management activities. These documented impacts include but are not limited to, loss of domestic water supplies, increased frequency and magnitude of flooding, loss of aquatic habitat, and overall decline in anadromous species. More detailed information regarding the management activities and level of impairment in the Elk River watershed can be found in the staff report for the April 2002 Regional Water Board meeting. This staff report is available at the following internet address:
http://www.swrcb.ca.gov/rwqcb1/agenda/04_2002/pdf/040802Item2.pdf.

Future Land Use Activities
With Potential Sediment Inputs

Some sediment inputs are from naturally occurring conditions. However, staff's analyses confirm that sediment inputs related to human activities have affected the Elk River watershed, and continue to affect the watershed. The most significant upland activity is timber harvesting, and Pacific Lumber is the largest timber harvesting landowner in the upland areas.

The California Department of Forestry and Fire Protection has established a rate of harvest for Pacific Lumber within the Elk River watershed. This rate is 600 clear-cut equivalent acres per year. This rate was established with the rationale of not worsening the current flooding conditions due to increased water volume resulting from canopy removal. While no agreement among agency and scientific personnel yet exists on the analysis used to establish this level (or any other particular level) of harvesting, the need for some limit has been established. A link

between increased peak flows following canopy removal and sedimentation from debris landslide, scour of sediment-laden channels, bank erosion, and torrent track scour has been demonstrated. Additional hydrologic and sediment impacts result from timber-related road use and construction.

Using methodology outlined in Lisle, et al. (2000), Regional Water Board staff conducted similar analyses, incorporating silvicultural and road-related sediment in-puts and cumulative stream channel aggradation. Staff's analysis of the data reveals that the recovery period for the watershed is strongly influenced by the magnitude of the existing sediment load and any new sediment inputs. In evaluating increased flooding, staff found that the 2001 flood severity is 135 percent greater when compared to the 1997 watershed conditions, a time when the sediment impairment was already sufficiently serious to have resulted in 303(d) listing. Conditions have worsened, and staff's analysis further indicates that conditions will continue to worsen, with watershed recovery delayed until 2007, assuming all sediment inputs were immediately abated. If such sediment inputs are not sufficiently abated, then the watershed will not recover in the foreseeable future.

Overview of Approach

Sediment inputs related to landslide events triggered by human activities have affected the Elk River watershed. To address these events, staff has proposed an approach for modifying timber harvest activities under FPR 916.8 that can be characterized as a site-specific, progressive method. The first step is to determine the stability of the land areas proposed for management activities. Protection measures are then matched to the land areas based on the land areas' stability. As the land stability decreases, the level or extent of the investigation and/or protection measures increase.

The staff approach involves dividing the landscape into three general categories of land stability and the risks posed to receiving waters. "Stable" lands are those areas that have a low probability to result in a sediment discharge to a watercourse as a result of land management activities. "Unstable" lands are those areas that have a high to extreme probability to result in a sediment discharge to a watercourse as a result of land management activities. "Metastable" lands are those areas not classified as stable or unstable because of insufficient information.

Inherent in these definitions is the concept of not just slope stability, but is driven by the risk to water quality. For example, there could be an active landslide feature, which on its face, might be viewed as "unstable." However, if the active landslide feature were on a ridge top, with a low probability of discharging sediment to a watercourse affecting beneficial uses, then the resulting classification would be "stable," for purposes of water quality protection.

Once the landscape stability classification is determined for a given land area, appropriate protection measures can be evaluated for that particular land area. Staff has developed proposed protection measures per 916.8(a)(6) that are progressive relative to the stability of the given land area. As the stability goes from stable to unstable, the level or extent of the protection measures increase. For stable areas, the current FPRs and HCP prescriptions would be appropriate protection measures. For unstable areas, avoidance of land management activities is recommended. Lands classified as metastable require a more refined approach.

For metastable land areas, the allowable level of management activity is dependent upon the knowledge of the land area and consequence(s) of the proposed management activity. Metastable areas inherently have uncertainty due to lack of knowledge of their response to land management and the risk to the receptor. As knowledge of the metastable areas is gained through characterization efforts, uncertainty is reduced. If characterization and protective measures reduce uncertainty and risk to below acceptable thresholds, then management activities may proceed.

If too much uncertainty remains on the metastable areas then a recalculated rate of harvest limitation may be necessary to approve harvesting in those areas. A rate of harvest limitation would be based upon the best available information of landscape response to land management and the condition of the receptor (the receiving water and its beneficial uses).

Details on the staff analysis and approach are contained in the attached "*Sensitive Watershed Nomination for Elk River Planning Watersheds, Humboldt County**, California**.*"

Conclusion

The Elk River watershed has been impaired due to sedimentation from soil discharges. Drinking water supplies, agricultural water supplies and salmonid fisheries habitat are several beneficial uses that have been impaired from these soil discharges. Further, these soil discharges have increased the frequency and magnitude of flooding within the named planning watersheds. Timber harvesting activities in the upland areas of the watershed continue to deliver soil to streams. The major timber harvesting landowner, Pacific Lumber, continues to harvest trees at a rate of approximately 600 clear-cut equivalent acres per year. This rate of cut, and the current Forest Practice Rules upon which it is based, do not fully address or mitigate the cumulative watershed impacts from the past, current and future timber operations in the Elk River watershed. Therefore, at the Board's direction, staff has developed this sensitive watershed nomination package for consideration for submittal to the Board of Forestry under FPR section 916.8.

STAFF RECOMMENDATION: Submit the Sensitive Watershed Nomination to the California Board of Forestry and Fire Protection for their consideration.

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